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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/592,708	08/23/2012	Takahiro Unno	TI-71334	9145

23494 7590 12/01/2016

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PULLIAS, JESSE SCOTT

ART UNIT	PAPER NUMBER
2657	

NOTIFICATION DATE	DELIVERY MODE
12/01/2016	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte TAKAHIRO UNNO and
BABOO VIKRHAMSINGH GOWREESUNKER

Appeal 2016-002823
Application 13/592,708
Technology Center 2600

Before LINZY T. McCARTNEY, TERRENCE W. McMILLIN, and STEVEN M. AMUNDSON, *Administrative Patent Judges*.

McCARTNEY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a rejection of claims 1–27. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

STATEMENT OF THE CASE

The present patent application concerns "audio processing, and in particular to a method, system, and computer program product for attenuating noise using multiple speech channels." Spec. ¶ 4. Claim 1 illustrates the claimed subject matter:

> 1. A method performed by an information handling system for attenuating noise, the method comprising:
>
> receiving a first signal that represents speech and the noise, wherein the noise includes directional noise and diffused noise;
>
> receiving a second signal that represents the noise and leakage of the speech;
>
> in response to the first and second signals, generating a first channel that represents the speech and the diffused noise while attenuating most of the directional noise from the first signal, and generating a second channel that represents the noise while attenuating most of the speech from the second signal; and
>
> in response to the first and second channels, generating an output channel that represents the speech while attenuating most of the noise from the first channel.

REJECTION

Claims 1–27 stand rejected under 35 U.S.C. § 102(b) as anticipated by Chan et al. (US 2009/0164212 A1, published June 25, 2009).

ANALYSIS

We have reviewed the Examiner's rejection in light of Appellants' arguments, and we disagree with Appellants that the Examiner erred. Although we address only a subset of the Examiner's findings and reasoning

below, we adopt as our own all of the Examiner's findings and reasoning as set forth in the Final Rejection and Answer.

Appellants argue Chan does not teach the following limitation recited in independent claim 1:

> in response to the first and second signals, generating a first channel that represents the speech and the diffused noise while attenuating most of the directional noise from the first signal, and generating a second channel that represents the noise while attenuating most of the speech from the second signal.

See App. Br. 4–5. Appellants assert "Chan teaches separation of the *directional desired* sound component (e.g., the speech itself) from the one or more *noise* components (which include *diffuse* noise)." App. Br. 5. Therefore, according to Appellants, "the cited teachings of Chan fail to teach claim 1's requirement of generating a *first* channel that represents the speech *and* the *diffused noise* while attenuating most of the *directional noise* from the first signal." *Id.* Appellants make similar arguments for independent claims 10 and 19. *Id.* at 5–7.

We find Appellants' arguments unpersuasive. As found by the Examiner, Chan discloses filters "configured to separate one or more directional desired sound components of the M-channel input signal from one or more other components of the signal, such as one of more directional interfering sources *and/or* a diffuse noise component." Chan ¶ 86 (emphasis added). We agree with the Examiner that one of ordinary skill in the art would understand this to mean that, in some embodiments, Chan's filters separate directional interfering sources (i.e., directional noise) from an input signal that also includes speech and diffuse noise. *See* Ans. 2–3. Put differently, one of ordinary skill in the art would understand that in certain

embodiments Chan's filters divide an input signal into two parts: (1) directional noise and (2) the remainder of the input signal, which includes speech and diffuse noise.

As also found by the Examiner, Chan's Figure 10 and its accompanying description disclose that Chan's filters separate speech and noise into separate channels. *See* Chan ¶ 89, Fig. 10. Specifically, Chan discloses the filters "separate a directional desired sound component of input signal **S10** from *one or more* noise components of the signal." *Id.* ¶ 89 (emphasis added). Given Chan's disclosure that separating an "input signal from one or more other components of the signal" includes separating the input signal from "directional interfering sources *and/or* a diffuse noise component," *id.* ¶ 86 (emphasis added), we agree with the Examiner that one of ordinary skill in the art would understand that, at least in some embodiments, Chan's filters generate a (1) speech channel that includes diffuse noise but lacks directional noise and (2) a noise channel that includes directional noise but not speech. *See* Final Act. 4; Ans. 3.

For the above reasons, we sustain the Examiner's rejection of independent claims 1, 10, and 19. Appellants argued claims 2–9, 11–18, and 20–27 together with claims 1, 10, and 19, respectively. App. Br. 7. We therefore also sustain the Examiner's rejection of claims 2–9, 11–18, and 20–27.

DECISION

For the above reasons, we affirm the rejection of claims 1–27.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED